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ABSTRACT

Holland's (1973) theory served as a basis for designing a 15-hour career development seminar for 24 undergraduate students. A Solomon four-group design (Campbell and Stanley, 1963) was employed to evaluate the effectiveness of the seminar, with the Career Maturity Inventory (Crites, 1973) serving as the dependent measure. Seminar participants evidenced significant improvement over 22 control students on four of the six scales of the Career Maturity Inventory (CMI). It was evident that the use of a single theoretical approach to design career development seminars rather than an eclectic approach, had two major advantages. First, the use of Holland's theory provided the student an organized conceptual framework for viewing the world of work. Second, the use of the theory simplified the task of training career development group leaders by offering a unifying principle. The study demonstrated the effectiveness of the career development seminar in improving career maturity, and further attested to the validity of the CMI as a measurement and evaluation tool. (Author)

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An Evaluation of a Career Development Seminar
using Crites' Career Maturity Inventory

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Abstract

Holland's (1973) theory served as a basis for designing a 15-hour career development seminar for 24 undergraduate students. A Solomon 4-group design (Campbell and Stanley, 1963) was employed to evaluate the effectiveness of the seminar, with the Career Maturity Inventory (Crites, 1973) serving as the dependent measure. Seminar participants evidenced significant improvement over 22 control students on four of the six scales of the Career Maturity Inventory. Advantages of using a single theoretical approach to design career development seminars rather than an eclectic approach are discussed.

An Evaluation of a Career Development Seminar
using Crites' Career Maturity Inventory¹

A classic purpose for attending college has been to prepare for a career. The past decade witnessed a variety of systematic schemes for delivering career development services. These programs range from formal, commercial models such as Life Career Development Systems (Benjamin & Walz, 1973) to more ad hoc, institutionally specific programs such as those reported by Felker (1973), Hazel (1976), and Harkness (1976). A common objective of these programs is to enhance what may be termed the career maturity of the participants (Crites, 1965). The construct of career maturity, or development, spans several dimensions: 1) consistency of career choice over time; 2) attitudes about work itself; 3) involvement and independence of the individual in the choice process; and 4) ability to assess one's own abilities and personal preferences and match them with occupational requirements.

Past attempts at evaluating career development programs have suffered from two primary deficiencies. First, dependent measures of unknown reliability and validity were employed, consisting mostly of subjective analyses of participants' impressions of and reactions to their program (cf. Felker, 1973; Aiken & Johnston, 1973; Cochran, Vinitsky, & Warren, 1974).

Secondly, there has been a conspicuous absence of rigorous experimental designs (Hazel, 1976; Harkness, 1976). The present study, therefore, was designed to 1) remedy the experimental and measurement deficiencies of previous evaluations, and 2) assess the effectiveness of the particular career development approach described in this research.

Most career development programs used in college settings employ a pragmatically eclectic approach, using experiential exercises and discussion topics drawn from a variety of theoretical perspectives. In contrast, the present program was organized around a unified theoretical approach (Holland, 1973). Holland's typological theory was employed as the basis for the program because of its apparent validity as a theory of career development (cf. Osipow, 1968; Gottfredson & Holland, 1975; Lucy, 1976).

Holland's theory is need-press in nature, and holds that there are six work environments and six corresponding personality types. To be congruent, a person possessing a certain personality type needs to select a career in a corresponding work environment. To apply Holland's theory, in the present program, a variety of experimental exercises were employed, including the Self-Directed Search (Holland, 1972) and several structured exercises from Pfeiffer & Jones (1975). The basic objective was for students to learn to identify their own typological profile and apply this knowledge to career planning decisions.

Method

Sample

The sample consisted of primarily freshman and sophomore management

students, 24 serving as treatment subjects and the remaining 22 serving as controls. It should be noted at this point, that the control sample was not entirely equivalent because students were not randomly assigned to either the treatment or control conditions. Because of institutional constraints, treatment subjects were those who self-selected themselves into the career development program. However, great care was taken to insure that treatment and control subjects were highly comparable in terms of age, race, sex, academic standing, and academic interests. Pretesting procedures described below further attest to their comparability.

Instruments

Since 1961 the Career Maturity Inventory (CMI) (Crites, 1973) has been used in a variety of settings and populations (Crites, 1964; Crites, 1965; Smith & Herr, 1972). The validation studies cited above have shown the CMI to be a reliable and valid measure of "career maturity." Because of the demonstrated validity of the CMI, it was chosen as the method of operationalizing career maturity in this study. The CMI consists of an Attitude scale and a Competence test.

The Attitude scale is designed to survey the subjective reactions an individual has toward making a career decision. The scale includes 50 true-false questions tapping five attitudinal clusters: 1) involvement in the career choice process, 2) orientation toward work, 3) independence in decision making, 4) preference for career choice factors, and 5) conceptions about responses. Total scores range from 0 (low maturity) to 50 (high maturity).

The Competence test consists of 100 multiple choice questions divided into five scales. These scales are measures of cognitive variables involved

in career choice. The five scales include: 1) self-appraisal, 2) occupational information, 3) goal selection, 4) planning, and 5) problem solving. Scores on each subscale range from 0 (low) to 20 (high); consequently, total scores on the competence test can range from 0 to 100.

Design

To control for both the initial comparability of the control and treatment samples in terms of the CMI and for any possible retesting effects, a 2 x 2 factorial design was employed. Half of all treatment and control subjects were pretested with the CMI at the beginning of the academic semester. At the end of the semester, all subjects completed the CMI. Thus the design consisted of four groups: 1) a pretested and posttested treatment group (n = 12), 2) a pretested and posttested control group (n = 11), 3) a posttested only treatment group (n = 12), and 4) a posttested only control group (n = 11). Although subjects were not randomly assigned to either the treatment or control condition, assignment to subsequent cells was entirely random. Aside from this lack of complete randomization, the procedure could be considered a Solomon 4-group design (Campbell & Stanley, 1963).

Procedure

The control subjects met as a class once a week throughout the 16-week semester. The course was designed to introduce the student to the basic functions of management (e.g., accounting, marketing, finance, etc.). Students were offered extra credit if they took the CMI, although their performance on the CMI did not affect their grade in the course.

The treatment subjects were enrolled in a Career Development Seminar for which they received regular academic credit, and which served as the experimental treatment. The subjects met in four different groups each of which had a different instructor (2 male, 2 female). The classes met for three-hour periods on five days throughout the semester for a total of 15 hours of group exposure for each subject. Typically, a session would consist of a lecturette by the counselor/facilitator, a structured exercise, and debriefing. Table 1 presents a skeletal outline of the activities of the seminar.

Insert Table 1 about here

It should be noted that the instructors of the Career Development Seminar had little or no knowledge of the form or content of the Career Maturity Inventory, which precluded any special "preparation" of their students to take this instrument. All pretest and posttest administrations of the Inventory were conducted in group sessions containing both treatment and control subjects.

Results

The pretest scores of treatment and control pretest groups were compared across the various scales of the CMI. Multiple t-tests revealed no significant differences between treatment and control groups, thus indicating their comparability.

Table 2 lists the means and standard deviations of the posttest scores on the CMI for all treatment and control groups.

Insert Table 2 about here

Two-way analyses of variance were performed for all groups on the post-test scores for the Attitude Scale and for the Competence test scores of the CMI, and are summarized in Table 3. For the attitude scale, a significant main effect was found in the predicted direction, $F(1,42) = 15.29, p < .001$. In addition, an analysis of variance yielded a significant main effect for the total score of the Competence test of the CMI, again in the predicted direction, $F(1,42) = 11.47, p < .01$. The main effects for both variables indicated that treatment subjects scored higher than controls. No significant interaction effect was found for either of the dependent variables, indicating that there was no interaction between the pretest and the treatment.

Insert Table 3 about here

Additional analyses of variance were computed for each of the five subscales of the CMI Competence test, in order to gain further insight as to the specific areas where seminar participants were improving. Of the five subscales of the Competence test, three yielded a significant main effect for treatment condition: Part 1 - self-appraisal, $F(1,42) = 9.73, p < .01$; Part 3 - goal selection, $F(1,42) = 6.81, p < .05$; and Part 5 - problem-solving, $F(1,42) = 9.54, p < .01$. Again, no interaction effects were significant for any of the dependent measures.

Discussion

The results indicate that participation in this particular career development seminar led to significant changes in career maturity, as measured

by the CMI. Furthermore, seminar participants evidenced improvement on several of the subscales of the CMI.

The main effect on the Attitude scales indicates that students viewed work as a more important aspect of their life, became more personally involved in the career choice process, and became more independent in their decision-making.

Differences on three of the subscales of the Competence test demonstrate that students made improvements in several specific skills. Results of Part 1 indicate that students became more adept at identifying their own skills and abilities, as well as weaknesses. Part 2 results show that students were better able to specify their own goals in terms of their career. Part 3 results demonstrate improved problem-solving skills relating to career choice. Furthermore, the results of this study attain more practical significance in light of predictive validity studies (Crites, 1965) which indicate that students who are higher on career maturity tend to be more stable in their career choice decisions over time, are higher achieving, and more successful on the job.

The results also suggest areas where improvements can be made in the career development seminar. For example, students did not show progress on either the Occupational Information scale or the Planning scale of the Competence test. High performance on both of these scales depends on students' knowledge about requirements for specific jobs. In fact, specific career information was not stressed in the seminar, thus the results of these two subscales are not surprising.

A point of caution should also be mentioned regarding the results. As described above, assignment to experimental conditions was not an entirely random process, in that subjects in the treatment conditions selected themselves into the career development seminar. Analysis of the pretest scores on the CMI indicates that these students were no different than the controls in terms of career maturity at the beginning of the semester. Furthermore, they were no different on variables such as age, sex, race, academic standing, and academic interests. In fact, the only discernable difference between treatment and control subjects is that treatment subjects decided, for one reason or another, to enroll in a career development seminar. Nevertheless, a possibility exists that a treatment by selection interaction may be affecting the results (Campbell & Stanley, 1963). However, to achieve a totally equivalent control sample, the career development seminar would have to have been denied to some students who desired it.

The major difference between the seminar presented in this study and aforementioned programs was the adherence to Holland's model as the central construct for the experience. It appears that there are two major advantages to this approach. First, the use of Holland's theory provides the student an organized conceptual frame-work for viewing the world of work. Second, the use of Holland's theory simplified the task of training career development group leaders inasmuch as it offered a unifying principle.

In conclusion, the study demonstrates the effectiveness of the career development seminar in improving career maturity; and further attests to the validity of the CMI as a measurement and evaluation tool. Future research might examine differences between career development programs

using a specific theory of career choice contrasted with programs that are eclectic in nature.

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FOOTNOTES

1. This research was supported by David Ross Grant number 7946-56-13105, Purdue Research Foundation.
2. Portions of this paper were presented at the annual convention of the American Psychological Association, San Francisco, August, 1977.

Table 1
Outline of Career Development Seminar Activities

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- Session 1: Get acquainted exercise, administration of Self-Directed Search (Holland, 1972), Typological People Assessment.*
- Session 2: Scoring of Self-Directed Search & Typological People Assessment, and discussion of group leader's Typological Work History.*
- Session 3: Typological Values Assessment,* relaxation exercises, Occupational fantasy, Energy International (Pfeiffer and Jones, 1975).
- Session 4: Typological Ranking of Significant Others,* Typological Ranking of Group Members,* generation of master typological codes.
- Session 5: Conversion of Holland codes to the Dictionary of Occupational Titles, (1965) and Typological Consensus Questionnaire.
-

*Denotes experimental exercise or instrument developed by authors (available upon request).

Table 2

Posttest scores on Career Maturity Inventory
for all treatment and control groups

Variable	TREATMENT		TREATMENT		CONTROL		CONTROL	
	Pre & Posttest		Posttest Only		Pre & Posttest		Posttest Only	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Attitude Scale	41.67	2.15	41.75	2.26	38.09	3.99	38.27	3.55
Competence Test: Self-Appraisal	16.92	1.24	16.83	1.03	15.36	1.86	15.64	1.80
Occupational Information	19.00	1.04	19.08	1.08	18.64	.92	18.55	1.37
Goal Selection	17.08	1.56	17.42	.99	16.00	1.73	16.09	1.87
Planning	17.33	2.19	17.42	1.24	17.27	1.42	17.82	1.40
Problem Solving	15.42	.99	15.58	1.50	13.64	3.07	13.45	2.50
Competence Total	85.75	3.98	86.33	3.85	80.91	5.17	81.55	6.09

Table 3
Summary of Analyses of Variance for
Posttest Scores on the CMI

Attitude Scale:

<u>Source</u>	<u>MS</u>	<u>df</u>	<u>F</u>	
Total	11.89	45		
Between	47.66	3		
A ¹	142.75	1	15.29	p < .01
B ²	.202	1	.02	n.s.
AB	.03	1	.003	n.s.
Within	9.33	42		

Competence Test:

<u>Source</u>	<u>MS</u>	<u>df</u>	<u>F</u>	
Total	27.66	45		
Between	90.11	3		
A	266.05	1	11.47	p < .01
B	4.27	1	.18	n.s.
AB	.01	1	.00	n.s.
Within	23.20	42		

¹treatment or control condition

²pretest or no pretest condition